

A Brief History of Photography

Using Images from the Collection at Pennypacker Mills

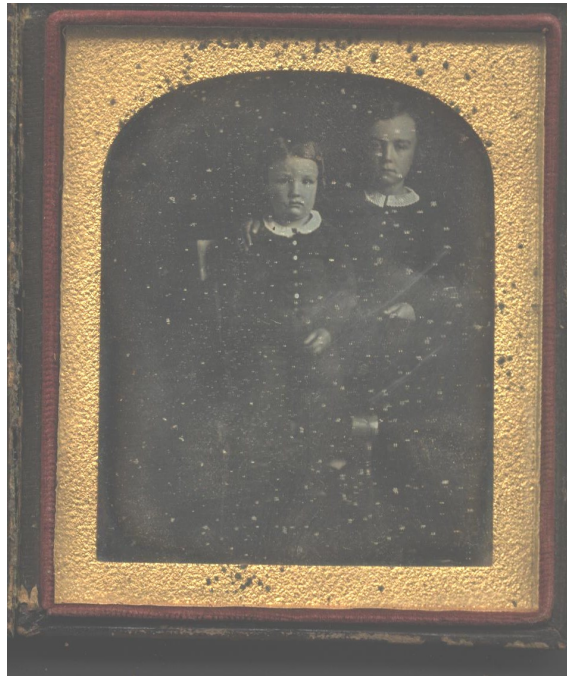
Prior to photography, profiles or later known as silhouettes, were popular from 1770 to 1860. Photography would be their downfall. They received their name after Etienne de Silhouette an eighteenth century French minister of finance who was known to be frugal and as a hobby cut profiles. Since he was known to be cheap and these profiles were inexpensive, the name stuck. Silhouettes were produced in three major ways: hollow cutting, cutting and pasting, and painting. Hollow cutting is using a white piece of paper, cutting out the profile and mounting over a black background. Cutting and pasting is cutting out the profile from a black card and mounting on a white background. Painting is just painting in the profile with black ink. Artists often used a pantograph that traced the shadow and reduced it onto a piece of paper. Oil paintings were expensive and took time to sit for, whereas silhouettes could be done by amateurs. A skilled artist could make one in a few minutes for about sixty cents. Copies could also be made.



Samuel W. Pennypacker wrote on the back, *These profiles of Matthias Pennypacker and Sarah Anderson his wife are the only portraits of them. They were cut probably*

Daguerreotypes

Pennypacker Mills has a great collection of photographs that not only highlight the life and times of the Pennypacker family, but also the progress in photography. Samuel W. Pennypacker was born in 1843 and basically grew up with the photographic processes. In 1826, Joseph Nicéphore Niépce created the first photograph in a primitive camera of a courtyard. It took eight hours of daylight for the image to appear. In 1829, Louis-Jacques-Mandé Daguerre partnered with Niépce. After Niépce died in



Daguerreotype of Samuel and his older brother John Pennypacker was taken in 1847 by an itinerant daguerreotypist J.W. Baer, known as the "Buckeye Blacksmith". This image was later reproduced and appeared in newspapers when Samuel became governor in 1903.

1833, Daguerre continued to experiment and in 1839, developed the daguerreotype, which is a copper plate covered with silver, polished and placed in a box with iodine vapors for five to thirty minutes. The result was a silver iodine film on the plate that was light sensitive. The plate was placed in a camera and exposed to light. It required quite a bit of light to acquire the image, taking between five and seventy minutes. The plate was then placed in another box that contained mercury vapors which brought about the final results of a mirror image. There is no negative with a Daguerreotype as it is a direct positive. The finished plate would have a mat put over it a piece of glass and fitted in a leather case. After 1847, a decorative preserver would be used to seal the plate, mat and glass. Instead of patenting the daguerreotype process in the usual manner, the French government acquired the rights in which Daguerre and Niépce's son and heir, Isidore received lifetime pensions. Because of this, anyone could use the process. When the process came to America, advancements in lenses and chemicals, it took just five minutes for the image to take making portraiture

possible. A daguerreotype is very sensitive and the silver plate cannot be cleaned or the image will be wiped off, one of the reasons they are covered with a glass plate.



Daguerreotype of Dr. Isaac A. Pennypacker, ca. 1850. Note the decorative preserver, the gold edging on the side of the mat, which is not on the previous daguerreotype.

Salt Prints

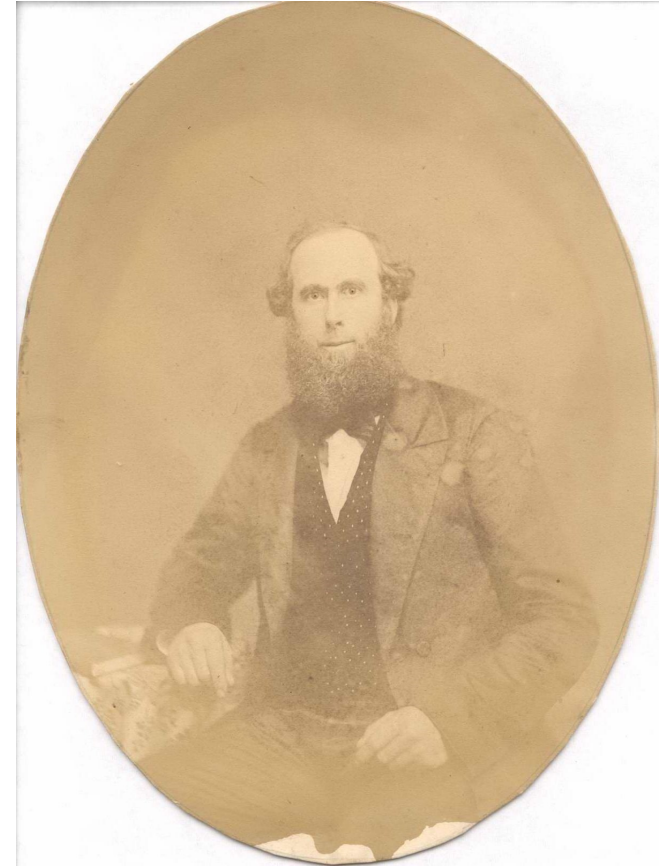


Salt print of Dr. Isaac A. Pennypacker, ca. 1850-1855.

Salt prints are a matte image and tend to fade. Note the daguerreotype had finer details.

At the same time that Louis-Jacques-Mandé Daguerre developed his Daguerreotype in France, Henry Fox Talbot was working on a process that used a paper negative. The paper negative used silver iodine as its light sensitive material. After exposure, the image was developed in Gallic acid. Paper prints were then printed out by applying table salt to a fine grade paper. The paper was dried and floated on a bath of silver nitrate forming a light sensitive paper.

The paper was placed in contact with negative and exposed to daylight creating the print. This developing out process became

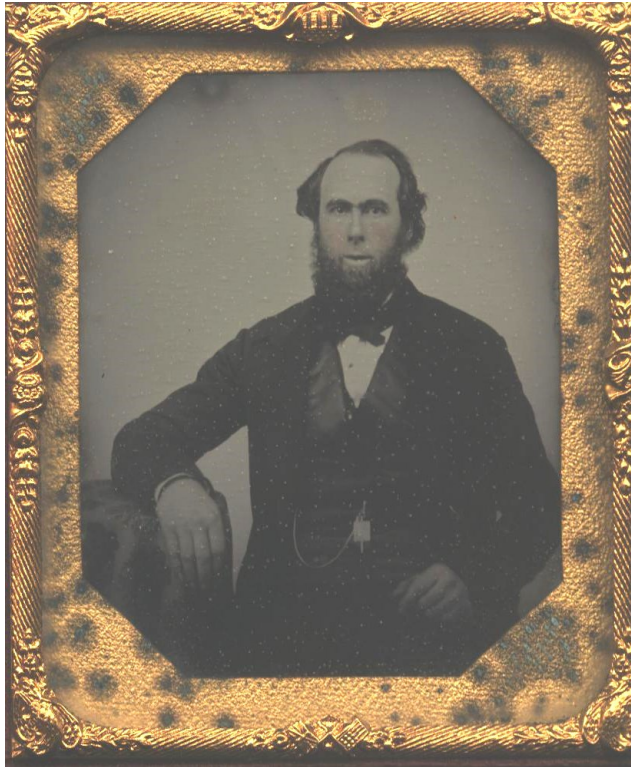


Salt print of Nathan Broomall, ca. 1850 (Father of Virginia Pennypacker). Details did not always show up in a salt print such as a person's eyes. The photographer actually filled in Nathan's eyes. Due to fading, the ink used for the eyes shows up more than the print.

known as calotypes or talbotypes. Talbot received an English patent for his invention in 1841 and charged photographers annual fees to use his process. Salt prints used a paper negative that was not clear thus resulting in a dull image compared to the daguerreotype. Since it used a negative, it produced a true positive that was not a mirror image like the daguerreotype, so signs on walls were not read backwards. Copies could be made from the negative. In order to make copies of a daguerreotype, it had to be photographed again with the camera. Due to the patent issues and the clarity of the image, they never competed well with the daguerreotype.

Ambrotypes

Many photographic processes were being developed at the same time. Collodion, a mixture of gun cotton, alcohol and ether, was invented in France in 1847. That same year, Frederick Scott Archer of England, being disgusted with the paper negative of the calotype, developed the collodion emulsion process on glass. He took the collodion and poured it over a piece of glass



Ambrotype of Nathan B. Broomall ca. 1854-1860. In 1870, Nathan became Samuel W. Pennypacker's father-in-law. Note the rosy cheeks.

and left it dry, creating a tough transparent film. When the glass plate was placed in a camera while it was still wet, sensitized and dried, it created a negative to which salt prints could be produced. He never patented his process and published his work in 1851. In 1854, James Ambrose Cutting of Boston noticed that if the glass plate was underexposed and placed against a dark or black background, the negative appeared as a positive, with the clear areas showing as black and the opaque areas looking light. He patented this process that became known as the ambrotype. These were often tinted, especially the person's cheeks, with a little red paint. Being on glass, it was cheaper to produce than on a silver-



Ambrotype of Elizabeth Adams McClain ca. 1854-1860. Elizabeth was a grandaunt to Samuel W. Pennypacker. Elizabeth was a sister to Grace Adams, wife of Joseph Whitaker.

coated piece of copper as was the daguerreotype. The exposure time in the camera was faster as well. Like the daguerreotype, they were covered with a sheet of glass, had a preserver and placed in a decorative leather case. Ambrotypes were mostly used for portraiture. They existed from 1850-1865 with a strong period of 1854-58.

Albumen Prints

Louis Blanquart-Evrard developed albumen prints in 1850 to be used with wet glass negatives. Albumen is egg whites that were beaten, salted and the paper is then coated, sensitized with silver nitrate, exposed

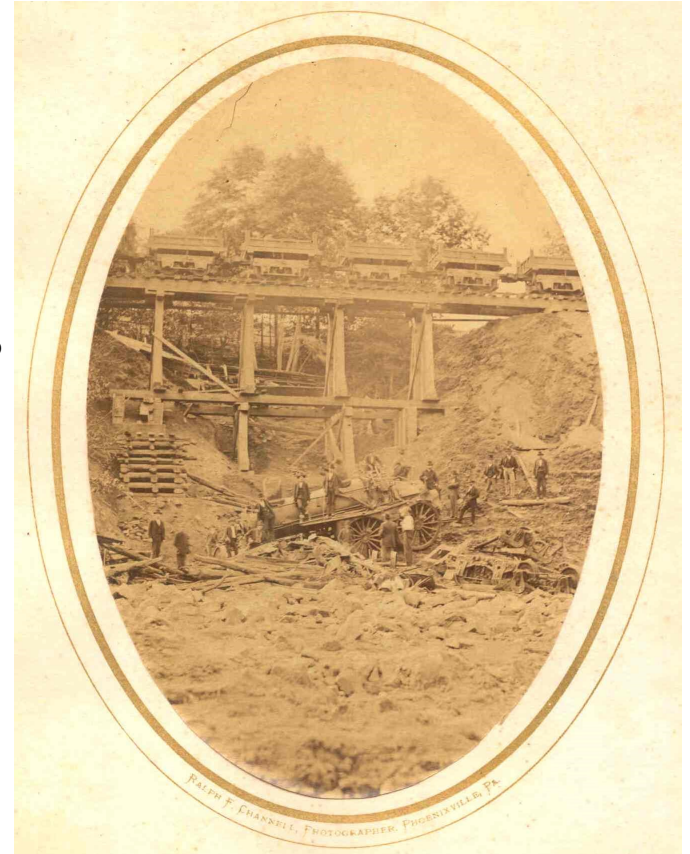
and processed. In 1854, albumen paper became commercially available.

Albumen prints from wet collodion negatives made up the majority of nineteenth century photographs and dominated the scene from 1855 to 1890. Albumen prints are very thin and want to curl, so they were mounted onto card stock. A popular size was that of the carte-de-visite, or visiting card photographs since they were the size of a calling card. Albumen prints often have a yellow tint to them as that can appear during processing, and also due to the aging of the albumen.



Tom Thumb and his wife, c. 1863 - Charles Sherwood Stratton(1838-1883) was born a dwarf and was exhibited by

P.T. Barnum. He was known as "Tom Thumb." He married another one of Barnum's dwarfs, Lavinia Warren (1841-1919) in 1863. Samuel W. Pennypacker wrote in his autobiography, *"Charles H. Stratton, "Tom Thumb," on exhibition by Barnum, came to the house, was carried to the roof and told us in a feeble voice with sprightly manner the details of his kindly treatment by Queen Victoria, whom he had lately visited."* This is during Samuel's childhood in Phoenixville around 1852.



On October 4, 1877, the Pennypacker family held a great reunion at Pennypacker Mills with more than 1500 in attendance. Special trains ran throughout the day. The event was marred by a cyclone and washed out the tracks of the Pickering Valley Railroad causing the train to wreck killing seven people. This photo was taken a few days later with trestles in place on the washout. The cars were burned to clean them up just leaving the engine.

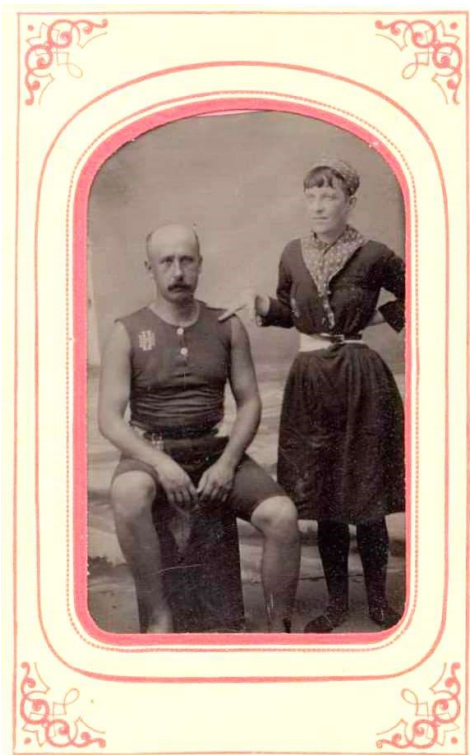
Tintypes

The wet plate process that made the ambrotype could be used on other materials. In 1856, Hamilton L. Smith substituted a thin piece of black lacquered iron for the glass plate of the ambrotype and the process was patented as a tintype. These, like the ambrotype, are a direct positive so there is no negative. Some photographers had cameras with nine or more lenses that would record nine photographs on one sheet of iron that was then cut apart so one would have multiple copies to give to friends and relatives. These could be as small as a postage stamp and were often inserted into a cardboard sleeve the size of a carte-de-visite so they would fit into photograph albums. Some were placed in cases just like the daguerreotype and ambrotype. Tintypes were enormously popular in the 1860's and 1870's and were made well into the late 1920's.

This process could be used on other materials including leather, and often used for campaign materials in the 1860's.



Tintype of Virginia E.B. Pennypacker placed inside a card.



Tintype of Charles Broomall and female friend in swimsuits taken at Atlantic City, ca. 1890.



Cased tintype of Virginia E.B.

Tintype of Eliza B. Pennypacker wearing a hat, ca. 1890.



Collodion Prints

Collodion prints could be either matte or glossy and were popular from 1870-1930. They used the wet plate negative and are toned with gold and platinum resulting in a warm olive black to a brownish tone with a milky white appearance. Collodion machine produced papers appeared in 1889. These had a tendency to curl and were mounted onto cards, such as cabinet cards, which became a standard size for photographs that came after carte-de-visites. These were an immediate sensation in 1890, and were the choice for most portraiture until 1910, since they were noted for their stability.



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Cabinet card of Virginia E.B. Pennypacker in 1891.



Above: collodion print of Samuel W. Pennypacker speaking, ca. 1899.

At right: cabinet card of Anna Maria and Eliza Pennypacker upon their graduation from Bryn Mawr College in 1897.



Silver Gelatin Prints

Silver gelatin prints revolutionized photography. In 1871, Richard L. Maddox developed the dry plate process using gelatin as a binder. A dry glass plate was already prepared so there was no need for the photographer to carry chemicals and a dark room tent with them. The negative was only exposed for 1/25th of a second, so cameras now had shutters. Prior to this, the photographer took the cap off the lens, timed it and placed the cap back on. Being 1/25th of a second, motion could be recorded and no longer looked like a blur or a ghost if someone moved, and the camera could be held, so there was no need to bring along a tripod. Commercially produced dry plates became available in 1879, and then really took off by 1890.



Silver gelatin photograph showing the mill complex at Pennypacker Mills with the mill in the foreground and mansion in the back, c. 1901-1915.



The Governor and the First Lady taken at the St. Louis Fair on the steps of the Pennsylvania Building on August 20, 1904.



Silver gelatin photograph of Virginia E.B. Pennypacker holding her grandson Samuel W. Pennypacker II at Pennypacker Mills in 1910.

Cyanotypes

Cyanotypes or blueprint photographs are actually one of the earliest processes described by Sir John Herschel in 1842. It used iron instead of silver, giving a blue image. This is the blueprint process and much like that of salt prints. These were popular among amateur photographers in the 1890's when there was also a renewed interest in salt prints.



Pennypackers Mill and granite marker for the Revolutionary War encampment, taken in 1900.



Eliza B. Pennypacker with toboggan at Pennypacker Mills, ca. 1908-1915.

Platinotypes

Platinotypes or platinum prints were a photographic process which used platinum instead of silver. William Willis patented this process in 1873 although they do not appear much prior to 1882. Due to the price of platinum in the 1880's and 1890's it took a while for these to take off. These appeared either as a rich brown tone, or a steel gray. This type of photo does not fade, but the brown ones may bleed. If you ever have a bunch stacked together, you will see the image transferred onto the back of the next one. They were very popular in the early twentieth century.



Platinotype of Samuel W. Pennypacker in 1905.



Steel gray platinotype of Bevan A. Pennypacker taken in 1898 in his seventeenth year.



Platinotype of Katharine R. Stackhouse in her wedding dress in 1907. She married Bevan A. Pennypacker.